

This listing of the claims will replace all prior versions, and listings, of claims in the application:

LISTING OF CLAIMS:

1. (Currently amended) A method to seal a porous dielectric comprising:
exposing the porous dielectric material that comprises reactive groups adjacent a surface of the material to a coupling agent comprising phosgene
phosphogene; and
• wherein the coupling agent reacts with the porous dielectric material to form coupling structures linked to the dielectric material, and further
 - wherein the coupling structures are exposed to a sealing agent comprising a crosslinking agent, wherein the crosslinking agent comprises a multifunctional alcohol.

2.-11. (Canceled)

12. (Currently amended) A method to seal a pore in a dielectric material structure comprising:
introducing a silane coupling reagent comprising a thiol end cap and at least one alkoxy side group reactive to SiOH at the surface of a pore; ~~and~~
introducing an oxidizing agent to facilitate formation of disulfide bonds between adjacent oxidized thiol end caps, and wherein a silicon atom of the coupling reagent is coupled to a sulfur atom of the thiol endcap, and a flexible chain is between the silicon atom and the sulfur atom, wherein the flexible chain comprises a portion of a bridge structure that is capable of sealing the pore, wherein the bridge structure is disposed across the opening of the pore.

13. (Previously presented) The method of claim 12 wherein the silane coupling agent comprises a silicon atom, and wherein the thiol end cap is coupled to the silicon atom by a substantially long chain of CH₂ groups.

14. (Previously presented) The method of claim 13 wherein the thiol end cap is coupled to the silicon atom by at least 4 CH₂ groups.

15. (Original) The method of claim 12 wherein the at least one alkoxy side group is selected from the group consisting of OCH₃, O-ethyl, O-methyl, O-tertbutyl, and O-isopropyl.

16. (Original) The method of claim 14 wherein the silane coupling reagent comprises three OCH₃ side groups.

17. (Original) The method of claim 12 wherein the oxidizing agent comprises formaldehyde.

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18.-24. (Canceled)

25. (Currently amended) A method to seal an exposed pore in a dielectric material comprising:

exposing the exposed pore to a coupling agent;

forming links coupling the coupling agent to a surface of the pore;

exposing the exposed pore and the coupling agent to an oxidizing agent; and forming a barrier across the pore, wherein the barrier comprises a barrier molecule comprising a silicon atom coupled to a surface of the pore, a sulfur atom, and a flexible chain between the silicon atom and the sulfur atom, wherein the flexible chain comprises a portion of a bridge structure that is capable of sealing the pore, and wherein the bridge structure is disposed across the opening of the exposed pore.

26. (Canceled)

27. (Currently amended) The method of claim ~~26~~ 25 wherein forming a barrier across the pore comprises forming a disulfide bond between a sulfur atom in the end cap of a first barrier molecule and a sulfur atom in the end cap of a second barrier molecule.

28. (Currently amended) The method of claim ~~26~~ 25 wherein the flexible chain comprises a substantially long chain of CH₂ groups.

29. (Previously presented) The method of claim 28 wherein the substantially long chain of CH₂ molecules comprises four CH₂ groups.

30. (Currently amended) The method of claim 25 ~~26~~ wherein the surface coupling group comprises an OCH₃ group.

31. (Original) The method of claim 25 wherein the oxidizing agent comprises formaldehyde.